

AP/IFW



Confirmation No. 3586

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE
BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicants: Wollenberg et al.

Examiner: M. Wallenhorst

Serial No.: 10/699,507

Group: Art Unit 1743

Filing Date: October 31, 2003

Docket: T-6298D (538-63)

For: HIGH THROUGHPUT SCREENING
METHODS FOR LUBRICATING OIL
COMPOSITIONS

Dated: July 26, 2006

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPELLANT'S REPLY BRIEF

Sir:

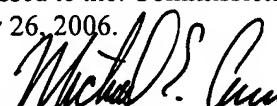
In response to the Examiner's Answer mailed June 1, 2006, Appellants respectfully submit that based on at least the arguments provided in the Appeal Brief of May 5, 2006, appealed Claims 1-45 are patentable over the applied references. The following comments are respectfully submitted in order to address statements made in the Examiner's Answer.

First, with respect to the statement regarding appealed Claims 39-42 in the bridging paragraph of pages 10 and 11 of the Examiner's Answer that "Since Kolosov et al teach that a lubricant oil can be analyzed having an additive therein as one of the embodiments of the invention (see paragraph nos. 0042-0043 of Kolosov et al), and one embodiment of an additive in a composition is a substance incorporated into a base material in a low concentration, the

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Dated: July 26, 2006


Michael E. Carmen



10/699,507

composition samples of the presently recited claims by maintaining each sample at a predetermined temperature for a predetermined time; measuring the storage stability of each sample to provide storage stability data for each sample; and outputting the results such that a diverse number of lubricating oil additives can be rapidly analyzed and screened. Only by using Appellants' disclosure as a guide has the Examiner been able to piece together the claimed invention.

The Examiner has failed to show that all of the recitations of appealed Claims 1, 20 and 43 are taught or suggested by the prior art. Accordingly, the Examiner has failed to make out a *prima facia* case for an obviousness rejection.Appealed Claims 1-9, 18-29, 38 and 43 are therefore not rendered unpatentable by Kolosov et al. in view of O'Rear or Tolvanen et al. Thus, appealed Claims 1-9, 18-29, 38 and 43 are allowable.

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Dated: July 26, 2006

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teaching of Kolosov et al anticipates the recitation in part a) of instant claim 39 reciting a major amount of at least one base oil of lubricating viscosity and a minor amount of at least one lubricating oil additive”, Appellants respectfully disagree. In order to support the conclusion that Kolosov et al. anticipate Claims 39-42, the Examiner maintains that it is inherent that in a lubricant composition having an additive therein that the base lubricant oil is present in a major amount while the additive is present in a lesser minor amount, citing for the first time the definition of an additive on page 20 of the Condensed Chemical Dictionary.

Contrary to the Examiner’s statement, an additive does *not* have to be incorporated into a base material in a low concentration. Specifically, a lubricating oil composition can be a concentrate that contains *a major amount of a lubricating oil additive and a minor amount of base oil of lubricating viscosity* as a diluent for the concentrate, e.g., see Mortier et al., Chemistry and Technology of Lubricants, 2nd Edition, Blackie Academic & Professional, page 88 (1997) (Exhibit 1), which shows that an additive such as an ashless dispersant can be present in a lubricating oil composition concentrate in an amount of 60% together with a base oil. As such, it cannot possibly be inherent that in a lubricant composition having an additive therein that the base lubricant oil is present in a major amount while the additive is present in a lesser minor amount as it is well established that inherency cannot be established by *probabilities or possibilities*. As summarized in *Continental Can Company USA v. Monsanto Company*, 948 F.2d 1264, 1269, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991), “Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” As Appellants have readily shown that a lubricating oil composition can be a concentrate that contains a major amount of a lubricating oil additive and a minor amount of base oil of lubricating viscosity as a diluent for the concentrate, a lubricating oil composition does not therefore have to contain a major amount of at least one base oil of lubricating viscosity and a minor amount of at least one lubricating oil additive. As such, the Examiner’s position is clearly in contrast to Federal Circuit precedent. Accordingly, the Examiner has failed to show that all of the recitations of appealed Claim 39 are taught in the prior art. Thus, appealed Claims 39-42 are not anticipated by Kolosov et al.

Accordingly, the Examiner has failed to show that all of the recitations of appealed Claim 39 is disclosed in the prior art. Thus, appealed Claims 39-42 are allowable.

Second, with respect to the statement regarding appealed Claims 1-9, 18-29, 38 and 43 in the paragraph of page 13 of the Examiner's Answer that "Based upon a combination of Kolosov et al., O'Rear and Tolvanen et al., it would have been obvious to one of ordinary skill in the art at the time of the instant invention to screen the lubricant/additive compositions in the combinatorial array taught by Kolosov et al. for storage stability by optically measuring the formation of sediments in each of the samples since Kolosov et al. teach that the plurality of samples in the array are screened for various material characteristics including the formation of sediments therein, and both O'Rear and Tolvanen et al. teach that it is common to screen lubricating oil compositions for their storage stability based upon the amount of sediment that forms in the samples over a predetermined time period at a certain temperature", Appellants respectfully disagree. The mere fact that the prior art could be modified as proposed by the examiner is not sufficient to establish a *prima facie* case. See *In re Fritsch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). There must be some basis in the references for concluding that the claimed subject matter would have been obvious.

Kolosov et al. merely disclose that the system or method disclosed therein may be used to screen or test most any flowable material that may be a commercial product itself or may be an ingredient or portion within a commercial product. O'Rear discloses a non-automatic means to measure the oxidation properties of lubricating oil compositions. Tolvanen et al. disclose a method and a device for determination of the stability or storability of heavy oil fractions derived from petroleum or of their mixtures, wherein the stability of oil is determined by measuring the intensity of light scattering from the oil surface, when an asphaltene-flocculating liquid is added to the oil sample for determining the stability of the oil. At no point is there any suggestion or motivation in O'Rear or Tolvanen et al. that the storage stability of the presently recited lubricating oil compositions can be determined in a high throughput, automated manner. Thus, nothing in O'Rear or Tolvanen et al. would lead one skilled in the art to modify the method of Kolosov et al. and arrive at the automatic high throughput method for screening lubricating oil

composition samples of the presently recited claims by maintaining each sample at a predetermined temperature for a predetermined time; measuring the storage stability of each sample to provide storage stability data for each sample; and outputting the results such that a diverse number of lubricating oil additives can be rapidly analyzed and screened. Only by using Appellants' disclosure as a guide has the Examiner been able to piece together the claimed invention.

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Second edition

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presence of water in gasoline engine low-temperature stop-and-go operation accelerates the contaminant drop-out process. Dispersants are a vital component in gasoline engine oils and are also used to advantage in diesel engine oils to suspend harmful soot contaminants in order to provide longer engine life between overhauls. Diesel engine oil temperatures are generally sufficiently high enough to vaporize water from the oil.

Ashless dispersants are designed to have their polar chemical heads attached to rather large hydrocarbon groups. As shown in Figure 3.11 these polar heads interact with sludge. The hydrocarbon groups provide the solubilizing action which maintains the potentially harmful debris in suspension in the oil. By use of an engine oil well-fortified with a dispersant additive, as well as by practicing engine manufacturers' oil drain recommendations, virtually all of the harmful deposit-forming debris is removed from the engine when the oil is periodically drained.

There are four different types of ashless dispersants: (1) succinimides, (2) succinate esters, (3) Mannich types, and (4) phosphorus types. As with detergents, dispersants are used in a variety of automotive and industrial oils, whilst combinations of dispersant types are often used in lubricant formulations. This discussion will emphasize dispersant use in engine oils.

Most dispersants currently in use are prepared from polyisobutylenes of 1000 to 10 000 molecular weight. Their polar functionality arises from amino and/or hydroxyl (alcohol) groups. The connecting groups, in most cases, are either phenols or succinic acids. The products with succinic acid groups are called alkenyl succinimides and succinate esters. The products from phenols are alkyl hydroxybenzyl polyamines (also called Mannich dispersants because of the name of the German chemist who discovered the method of preparation). These materials are generally processed as 40 to 60% concentrates in base oil.

Both the succinimides and the succinate esters are derived from the same chemical intermediate. The preparation of this intermediate is shown in Figure 3.12. Polyisobutylene is reacted with maleic anhydride to form polyisobutyl succinic anhydride. This material is often referred to as 'PIBSA'. In the formation of succinimides, the PIBSA is reacted with a polyamine to form a structurally complex mixture which can contain imide, amide, imidazoline, diamide, and amine salt.

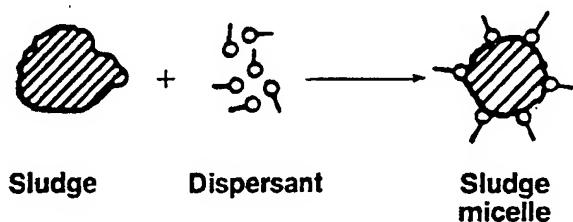


Figure 3.11 Sludge dispersion.

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